

CHICAGO OFFICE,
40 La Salle Street.

MILWAUKEE OFFICE,
124 Grand Avenue.



Published by E. HARRISON CAWKER. Vol. 24, No. 4. MILWAUKEE AND CHICAGO, FEB., 1888.

TERMS: \$1.00 a Year in Advance
Single Copies, 10 Cents.

1888.

CAWKER'S

1888.

AMERICAN FLOUR MILL AND ELEVATOR DIRECTORY.

* FOR 1888 (COPYRIGHTED) *

Is now READY FOR DELIVERY. This Directory is far more complete than any of the five preceding ones. Our long experience has taught us the wants of the trade, and we have used our best endeavors to meet them. The principal features are as follows:

- 1.—List of Flour Mill owners of the United States and Dominion of Canada, with Post Office address, County and State, and when information is obtained, the capacity in barrels of flour per day of 24 hours, kind of power used (steam or water), roller or stone system.
- 2.—Lists of Corn, Oatmeal, Rice, Feed Mills, etc.
- 3.—List of Grain Elevators and Warehouses.
- 4.—List of Millwrights.
- 5.—List of prominent American Flour and Grain Brokers.
- 6.—List of Foreign Flour and Grain Importers.
- 7.—List of Mill Furnishers, etc.
- 8.—Statistics valuable to the Trade.
- 9.—Millers whom we believe to be worth Ten Thousand Dollars or more will be indicated.

This directory gives the address of 16,062 Flour Mills in the United States and 1,714 in the Dominion of Canada. The additional lists of Feed, Corn, Barley, Oatmeal and Rice Mills, Elevators and Warehouses, Millwrights, Flour and Grain Brokers, Importers, etc., adds to the number of addresses several thousand. The COUNTIES are included in the address, and in cities, the street and number in most instances. We have had valuable aid in compiling this work from Secretaries of Boards of Trade, of Bureaus of Labor Statistics and Manufactures, from Railroad and Steamship Companies, from the milling and commercial press generally, and from mill and grain elevator owners themselves. That the work is perfect, we do not claim, for in the nature of things that is an impossibility, but as it is, it is indispensable to all desiring to reach the flour and grain trade of this country, and is well worth the price asked.

Price of Directory, \$10 per copy, post paid to any address.

If desired Directory will be sent by express C. O. D. Remit by Express or by Exchange on New York, Chicago or Milwaukee, or Post Office Money Order. Address,

E. HARRISON CAWKER, PUBLISHER,

No. 124 Grand Avenue,

MILWAUKEE, WIS.

GANZ & CO.

Budapest, Austria-Hungary.

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters Patent for the United States of America. For full particulars address as above.

[Mention this paper when you write to us.]

BUY Goodyear Rubber Co's RUBBER GOODS. THEY ARE THE BEST MADE.

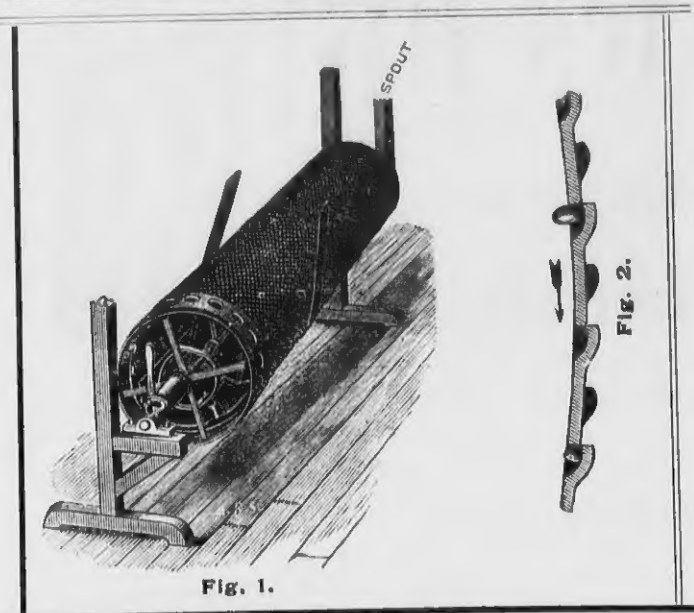
"GOLD SEAL" RUBBER BELTING,

372 and 374 EAST WATER STREET,
MILWAUKEE.

131 EAST THIRD STREET,
ST. PAUL.

201 NICOLLET AVENUE,
MINNEAPOLIS.

OAK TANNED LEATHER BELTING.



CUT herewith, FIG. 1, represents the PRINZ COCKLE MACHINE, single reel, without frame. FIG. 2, shows a section of the Indented Cylinder, and FIG. 3 is a large machine with grading reel. The inventor and manufacturer of this machine has had long and thorough experience in all departments of Grain Cleaning, and this Cockle Separator certainly has no superior. It is equally adapted to use in large or small mills, and the price is within the reach of all. The manufacturer has demonstrated that his machine removes more Cockle than other machines. It occupies but little space, and consequently any mill will have room enough in which to place it.

CONSTRUCTION.

The machine consists of a cylinder about 70 in. long and 16 in. diameter, mounted on a stationary shaft 8 1/2 in. long, which has to be supported at both ends—(either as seen in the cut, or it can be hung up under the ceiling or in any other suitable position.) Inside of the cylinder is a trough suspended on springs and agitated by the revolution of the cylinder itself, to receive the cockle which is carried up by the indentations of the cylinder and properly discharged into this trough. By the agitating motion of this trough the cockle is discharged at the front end of the cylinder. The wheat is entered at the end of the reel, and is rolling at the lower side of the same in the direction of the discharge, and by this rolling the cockle finds its way into the indentations and gets raised up and discharged into the trough. There is nothing complicated in the machine, consequently nothing can get out of order to make trouble and annoyance. It has only two bearings to oil, and if oiled once a day is all it needs, as it is running only at a speed of 78 revolutions.

The machine is entirely controlled by the operator, by a single lever seen at the front of the cut (Fig. 1), and it can be set either to take out any quantity of cockle, or if there is none in the wheat, it can be set to take out nothing. There is no machine in the market that has this device. The indentations are of a new design and protected by U. S. Letters Patent granted to F. PRINZ. This enables the manufacturer to indent sheet iron or steel plates, which are far superior in ensuring the durability of the machine than ZINC, of which material all other cockle machines are now made. The machine is driven by simply taking a two-inch belt around the reel at any point. The Single Reel Machine (Fig. 1), has a capacity up to 30 bushels per hour. Cockle Cylinders are ALL made of the SAME SIZE and where greater capacity is required it is secured by a grading reel (patented by F. PRINZ), and guaranteed not to clog as other devices do, which separates the COARSE grains of wheat, from the SMALL wheat and cockle, and the latter (small wheat and cockle) will only go to the Cockle Cylinder for complete removal of the cockle. The Grading Reels are built of the proper size to furnish separated wheat and cockle for feeding one, two or more cylinders. All parts of this machine are very easily accessible, NOT ONE INSIDE ANOTHER and in a substantial frame, NO FAST MOTION, and very little power needed.

ALSO EXCLUSIVE MANUFACTURERS OF

Prinz's Patent Improved Smutter, and Prinz's Patent Combined Dustless Oats and Screenings Separator.

FAUSTIN PRINZ,
659 East Water St. Milwaukee, Wis.

* PATENT *

PRINZ'S

Improved Cockle Machine

THE VICTOR.

* SLOW MOTION. *

* LITTLE POWER. *

PATENT *

READ THE FOLLOWING TESTIMONIALS.

"CENTENNIAL MILLS," EVANSVILLE, Ind., June 14, 1877.
FAUSTIN PRINZ & CO., MILWAUKEE, Wis.
GENTLEMEN:—Inclosed please find check in payment of Cockle Machine sent us May 25, 1877. The Machine does its duty.
Yours truly, J. W. LAUBACHER & BRO.

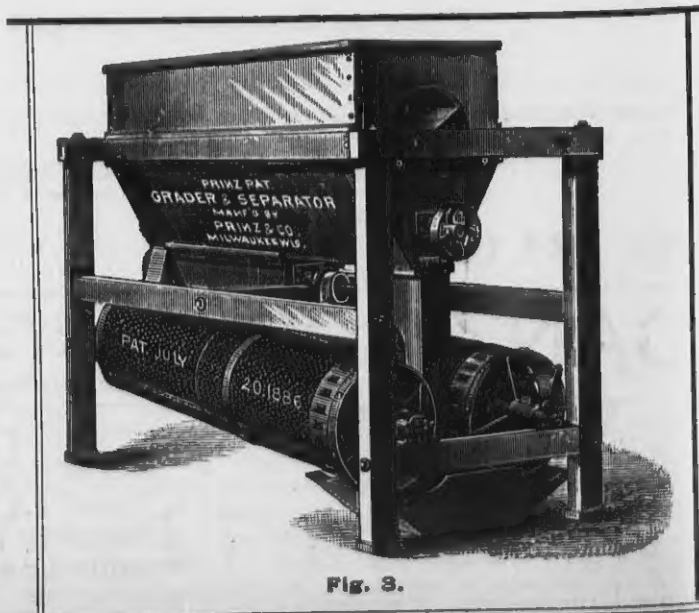
Office of "PHOENIX FLOURING MILLS," Waukesha, Wis., March 17, 1887.
F. PRINZ, Esq.:
DEAR SIR:—Yours of the 16th inst. at hand. In reply to inquiries as to how we like your combined Separator and Cockle Machine, which we have now had running nearly a year, I can only say it is the boss. It displaced a well-known combined machine, and although yours was only guaranteed to do as much work as the one it displaced, I am glad to say it does THREE TIMES AS MUCH, and does it in first-class style. The old machine blew almost one-third of the scorings into the dust-room, while from yours we cannot find a kernel. The Out Separator is as perfect as I have seen; the cockle it removes without wasting whole kernels of wheat; the suction is in perfect control of the miller; and last, though not least, it uses only half as much power as the machine it displaced. You are at liberty to use this recommendation, and if any brother millers wish to see the machine in operation, we shall be pleased to show them. Wishing you all possible success, I remain,
Yours respectfully, CHARLES G. DEISSNER.

Office of GALESBURG ROLLER MILLS, GALESBURG, MICH., Nov. 17, 1887.
FAUSTIN PRINZ & CO., 659, 661 and 663 East Water St., Milwaukee, Wis.
DEAR SIR:—The Cockle Machine arrived in good condition. I could not procure a millwright, but the connections of your machine are so complete. I went to it myself and put it in and had it running in less than four hours. I have no hesitation in saying that your Cockle Machine is the best that I ever handled, being entirely under control of the miller; it does all you claimed and more; it not only removes all the cockle, but scours the wheat and removes the dust to my utmost satisfaction. I consider it a mite for space and a monster for the work it accomplishes. I displaced a rolling screen for your machine and assure you it is a profitable change.
Yours respectfully, M. W. MORTON.

Office of GEM MILLING COMPANY, Milwaukee, Wis.
Mr. F. PRINZ:
We have used your No. 2 Combined Grader and Cockle Machine two months and are much pleased with its work. The objectionable features of our former machine, which required constant attention, owing to Grader sieve becoming clogged and allowing cockle, seed, etc., to pass over with the wheat, are ENTIRELY OBVIATED in your machine, the work being always uniform, owing to Grader reel keeping perfectly clean, consequently all seeds, cockle, etc., must enter Cockle cylinders which removes them in a thorough manner, taking out very little broken wheat. We can use one or two cylinders as condition of wheat requires, and with cut-off arrangement on Grader reel almost perfect separations can be made. Requires very little power and space, and we think a much more durable machine than we formerly used.
Yours truly, GEM MILLING CO. J. ZAHN, Supt.

RELIANCE MILL, Milwaukee, Dec. 19th, 1887.
Messrs. F. PRINZ & CO., City.
GENTS:—The Grader and Cockle Machine you put in our mill three months ago in place of the Kurth Cockle Machine, has given the best of satisfaction, as our wheat is unusually full of cockle. wild buckwheat and seed this year, is entirely cleaned from same by your machine without any loss of wheat. Respectfully yours, O. MANEGOLD & CO.

Unequaled in Capacity and Simplicity. One Reel
will Handle 16 to 20 Bushels per Hour.





Published by
E. HARRISON CAWKER. { VOL. 24, No. 4. MILWAUKEE AND CHICAGO, FEB., 1888.

TERMS: { \$1.00 a Year in Advance.
Single Copies, 10 Cents.

MILLING IN KANSAS.

We have just received through the courtesy of Hon. Frank H. Betton, Commissioner of Labor for the State of Kansas, a copy of his third annual report. So far as it relates to the milling industry of the state, the commissioner has spared no pains to get a complete and satisfactory report. From 450 sets of inquiries sent out, partial or full returns were received from 307 mills. The commissioner is to be congratulated on receiving so large a percentage of returns for (we judge from experience) if there is anything in the world that the average miller likes to postpone "till to-morrow," which too frequently means forever, it is the filling out of a blank asking questions about his business.

Commissioner Betton says: "The revolution undergone by this industry during the last few years in the substitution of the roller system for the time-honored buhr, has been severe. The change necessitated large outlays, and the result is that in common with so many other industries the business is concentrating in larger mills and heavier capital. With the extension of railroads into almost every portion of our state and the superior grade of roller flour, the old-fashioned local mill is "losing its grip." Flour is shipped in and wheat is shipped out, and the result is that the buhr-mill has to shut down or limit itself to custom work with a diminished output."

Further on, the report says: "Three hundred and seven mills report an invested capital of \$7,923,390, making an average of \$25,809 each against 322 reporting last year with a capital of \$7,379,950 and averaging \$22,919.23. It will be seen that the average amount of capital to the individual establishments is gradually growing larger, which is in accordance with the theory that the business is slowly concentrating and that the pioneer mills run on the old system are being abandoned or converted to other uses. That such is the case, I think admits of no doubt; and with the depression that has marked this industry during the past year, probably many of the newer mills have done very little business."

"Twenty mills use rolls alone, numbering in the aggregate 271 sets, producing 3,885 bbls. per day of 24 hours. Forty-nine mills use buhrs alone—111 in number, producing 1,940 bbls. per 24 hours. One hundred and eighty use rolls and stones, with capacity of 13,296 bbls. per 24 hours."

Of reported mills 169 use steam, 109 water and 18 both.

The report entire gives a very valuable insight into the condition of labor and manufactures in all branches throughout the state. The state of Kansas may well feel proud of having so able and industrious an officer as Mr. Betton.

IMPROVED CONSTRUCTION OF GRAIN ELEVATORS.

A system of building and arranging the machinery for work in grain elevators which is designed to reduce the cost of erecting and equipping such establishments, and whereby the work may be systematized and facilitated and the running expenses reduced, has been patented by John A. McLennan, Chicago. The cupola, running longitudinally with the body of the building, is divided into four floors, in the following order, from the top down—machinery floor, garner floor, scale floor and spouting floor—the latter immediately above the bin floor in the body of the building. Near the longitudinal center of the structure are located a series of endless elevators, placed in pairs of one receiving and one shipping elevator, and extending below the basement floor, preferably through the same tanks, which are made of two depths, forming hoppers for the receiving and the shipping elevators and the boots thereof. The elevators extend to the machinery floor, and are all operated from the same shaft, a spout being attached to the head of each elevator to discharge the grain into either a receiving garner or its adjoining shipping garner, these garners each occupying a separate bent in the building. Below these garners, and on the scale floor, are located, respectively, the receiving hopper and the shipping hopper scales, likewise arranged in pairs, and in the same relation with the bents of the building and with the receiving and shipping elevators, there being an arrangement of spouts for directing the grain from the scales to the bins, or to any of the pipes for loading the cars. The lower ends of the bins may also be connected with the transfer or shipping elevators by the spouts leading therefrom to the lower portions of the receiving hoppers.

The distance between the pairs of elevators is governed by the length of the cars in use, as there must be the length of one car between the pairs, in such manner that all the cars in a line may be unloaded simultaneously, the construction being such that both receiving and shipping may be conducted at the same time, with no loss of time or labor in shifting gangs of men, as is unavoidable under the old system, where the receiving

elevators are placed in one line, leaving the distance between the elevators nearly the length of a car, and locating the shipping or transferring elevators in one or more lines parallel to the receiving elevators, but in different lines of bents. By this arrangement, also, both the receiving and shipping elevator boots may be put in the same tank, thus making a saving in the cost of construction, while (the transfer or shipping boot being on a lower level) the transfer spouts may be passed below the railway tracks and be stationary and yet out of the way, the loading of the two elevators together causing only one bent to be obstructed, and the work of both the weighers and the machinery men is greatly facilitated.

A GREAT CHICAGO ELEVATOR.

The strip of land in the north branch of the Chicago river, correctly called Ogden's Island, but commonly called Goose island, will henceforth enjoy a world-wide reputation as possessing the largest grain elevator in the world, says the *Times*.

The Armour elevator, which is now nearly completed, is a colossal structure. Its dimensions are 650 feet long, 160 feet wide, and 152 feet high. The largest lake vessels moored alongside of it look puny and insignificant. The Chicago, Milwaukee & St. Paul railroad track runs along the west side of the building, and a switch from the main line connects with a track running the entire length from north to south of the interior. An idea of the capacity of this leviathan warehouse may be conceived when it is stated that an ordinary freight train of cars can be shunted into it and the huge gates at either end shut. When completed, it is expected to furnish storage for 2,000,000 bushels of grain.

The architects of the building are J. T. Moulton & Son. The principal work in the construction of the building has been done by Armour & Co. themselves. About 10,000,000 feet of lumber has been used in fixing up the interior. The engine, built by the Pusey & Jones company, of Wilmington, Del., is of 1,000 h. p., compound vertical, and stands about 40 feet high. It is the largest engine ever made in Delaware, and is a beautiful piece of workmanship. The power to feed this huge monster is furnished from four steel boilers which are 6 feet high by 18 feet long.

BURNED—The flouring mill owned by E. B. Kellogg & Co., at Wrightstown.

BURNED—John A. Deeter's feed mill, at Dixon, Ill.

MILLERS' NATIONAL ASSOCIATION MATTERS.

[Official Circular to the Milling Trade.]

SECRETARY'S OFFICE,
MILWAUKEE, Jan. 28, '88. }

The Executive Committee, at a meeting in Chicago, January 19th, '88, adopted the following resolution:

Resolved, That the secretary be and is hereby instructed to correspond with the principal exporting centres, embodying the views of the committee, requesting the various localities to call a meeting of the exporting millers in their vicinity for a discussion of the subject, and to give expression to their views in regard to the entire question of abuses in the export trade and their remedy, and principally, to state to what extent they will sustain the association in carrying out their wishes.

In the opinion of this committee, the export Bill of Lading now in general use, is responsible for a large part of the evils complained of, from the fact that under it the Transportation Company is bound only for the rate of freight, but exempt from every other liability; and in as much as the operation of the Bill of Lading extends from mill to market, the co-operation of the foreign receivers would seem to be a necessity; and to that end the secretary was instructed to correspond with representative bodies in the flour trade at London, Glasgow and Liverpool, and request that delegates be sent from these bodies to the convention at Buffalo.

The Association, through its Executive Committee, is willing and desirous of undertaking any reform of the abuses existing in the export trade, for the general good of its members. In undertaking the correction of these abuses, the exporting millers themselves must come to an understanding with regard to their grievances; the necessary remedy; and last but not least, put themselves upon record to what extent they are willing to stand by the Association, and furnish the where-with-all to carry out the objects contemplated.

To the end that the committee may have the fullest information, they would suggest that the millers in every locality, doing an export business, come together at an early date and discuss thoroughly every detail that has any bearing upon the subject; that they come to a definite understanding, and report to the Secretary their conclusion which will be submitted to the Executive Committee. A full expression from all sections of the country is desired in order that the committee may be fully informed on the following points:

First, what, if any, are the abuses pertaining to the export trade in each locality; and what changes have you to suggest in the existing custom?

Second, are your shipments handled with promptness and care from mill to seaboard? If not, over what portion of the route do you complain of neglect and delay?

Third, are you satisfied with the manner in which the transportation line or company by which you ship, handle your property while in transit from mill to seaboard? If more than one company, line or route, which do you find the most satisfactory, and which the most unsatisfactory?

Fourth, how about shipping and contracting freight by regular line, and on arrival at seaboard; the property so consigned being transferred to a different class of steamers known as "tramps"?

Fifth, what changes would you suggest in the existing form of Bill of Lading that will

form an equitable contract between the shipper, the transportation company, and the receiver?

These are but a part of the items requiring consideration. Others will suggest themselves during your deliberations. The committee desire all the information that can be furnished on this subject, in order that they may act understandingly.

I would say in this connection that since the report of the meeting of the committee was published, there has been received at this office a joint letter from the Boards of Trade of London, Liverpool and Glasgow, covering a pro-forma Bill of Lading, with the request that it be presented to the Executive Committee for such changes as they may have to suggest. From a foreign receiver's standpoint, this reform Bill of Lading may be acceptable, but is not entirely in harmony with the ideas entertained by the majority of the exporting millers. It will be submitted, to the committee with your suggestions, as the contribution of the foreign receivers, and as embodying their views.

Respectfully,

S. H. SEAMANS, Sec'y.

[COPY.]

LONDON, 10th Jan., 1888.

DEAR SIR:

We are instructed by the committees of the London Flour Trade Association, of the Liverpool Corn Trade Association, and of the Glasgow Corn Trade Association, to submit to the consideration of your Executive Committee, the enclosed revised forms of through Bills of Lading, which have been drawn up, after careful consideration, with the view of remedying grievances, which have been long felt by those interested in the trade in this country, and which arise through the absence of responsibility (under the existing through bills of lading) on the part of the American transit Companies for the due forwarding and safety of the goods entrusted to them for transmission to this country. Our committees hope that your committees will approve of these revised bills of lading, and that they will use their influence in getting them adopted by the American transit companies, because their adoption generally by all interested in the trade between your country and ours, would, in the opinion of our committees, tend to facilitate business between the two countries. The uncertainties and risks consequent upon the through bills of lading at present in use, deter many buyers (on this side) from contracting for flour from your side.

Our committees would be glad to hear from your Association on the subject.

Communications thereon to be addressed to

Mr. GEORGE R. BOWMAN,

Hon. Secretary London Flour Trade Ass'n,
38 Seething Lane, London, E. C.

Our committees desire that no alterations or additions be made to the enclosed bills of lading without their approval of said alterations or additions. There is a strong feeling in the trade (in this country) that business cannot be continued on the existing through bills of lading.

Respectfully,

GEORGE R. BOWMAN,

Hon. Secretary London Flour Trade Ass'n.

JOHN HANNAY,

Sec'y of the Liverpool Corn Trade Ass'n, Ltd.

JOHN McDUGALL,

Sec'y of the Glasgow Corn Trade Ass'n.

To S. H. SEAMANS, Esq.,
Secretary Miller's National Ass'n,
Milwaukee, Wisconsin, U. S. A.

Secretary Seamans replied as follows:

MILWAUKEE, Wis., Jan 28, 1888.

Mr. George R. Bowman, Hon. Secretary London Flour Trade Association, 30 Seething Lane, London, E. C.

DEAR SIR:—I have the honor to acknowledge the receipt of your communication of the 10th inst., signed also by the respective secretaries of the Liverpool and Glasgow Corn Trade Associations, endorsing a pro-forma Anglo-American bill of lading, which, as requested in your communication, will be submitted to the Executive Committee Millers' National Association at their next meeting. As there is no definite date fixed for the meeting, I am unable at this writing to inform you as to the time when this matter will be taken up for consideration. It will, however, be forwarded to the members of the committee individually, in order that they may be prepared to argue fully its merits and propose any changes they may deem necessary when our meeting convenes. I would state in this connection, that our committee held a meeting in Chicago on the 19th inst., when this subject was brought up, as you will see per enclosed printed slip. As a result of that meeting, a circular letter is now in preparation for general distribution among the members, calling for an expression of each exporter's views individually, in order that all may be prepared at our annual meeting to act intelligently upon the subject.

Various interests differing widely must be taken into consideration, as our experience in dealing with similar undertakings warrants the belief that a full discussion and interchange of opinions are necessary in order to harmonize these various interests, and to formulate a set of rules, regulations, etc., which will prove satisfactory to all concerned.

I have carefully compared your pro-forma bill of lading with the one now in general use (modeled by the various lines centering at New York in conjunction with the committee of the New York Produce Exchange), and am of the opinion that our shippers will require other and more radical changes than your bill of lading contemplates. I apprehend, however, that nothing definite can be decided until the convention meets at Buffalo, to which, by direction of the executive committee at their late meeting, I am instructed to extend an invitation to your Association to send delegates, and I shall be pleased to receive from them an acceptance of this invitation. I am, Sir,

Yours Very Respectfully,

S. H. SEAMANS,
Sec'y M. N. A.

[LATER.]

MILLERS' NATIONAL ASSOCIATION,
SECRETARY'S OFFICE.

MILWAUKEE, Feb. 13, 1888.

Since the issue of my circular, dated Jan. 28th, pertaining to abuses in the export trade, I am in receipt of two letters from foreign receivers, extracts from which are as follows:

(No. 1) London, E. C., Jan. 21st 1888. "With regard to delays in transit the Furness Line has seriously disappointed us and our customers, and we must leave you to ship by those lines recording good time.

We understand that an agreement has been mooted by the several Steamship Co.'s to make a quay rate of 1s. 6 (one shilling and six pence) per ton on flour on the plausible plea of CONVENIENCE TO CONSIGNEES, which is quite fallacious. Such a clause amounts to an import duty of 2d per 280 lbs. And the unfairness of such an imposition is manifest by THEIR NOT SUBJECTING WHEAT to the same base AS THE MILLERS HERE WOULD NOT STAND IT. We hope your Association will closely watch any such specious innovations, and at the same time purge THE PRESENT BILL OF LADING of many obnoxious clauses,

by which the Transport Co.'s contract themselves out of their proper liability, as in its present condition London bankers will not advance upon it; and upon appealing to the courts our JUDGES *only laugh at our being so foolish as to be a party to so one-sided and indefinite a contract.*"

(No. 2.) LONDON, E. C. Jan. 24th, '88.

"You are probably aware that there is a move being made by a combination of the steamship owners of the regular lines, and the dock companies here, to force a bill of lading upon the trade generally, the great new feature of which is that a charge of 1-6 (one shilling and sixpence) per ton shall be made to the consignees of all flour landed in London. This charge of 1s 6d a ton will simply relieve ship-owners of a charge which they now pay for the use of the docks, throwing the burden upon the receiver and we wish you to clearly understand that if you find it impossible to obtain any other bill of lading than one including this clause you must please deduct same JUST AS IF IT WERE FREIGHT.

We may also remark that this scheme can only result (if successful) in the extra charge COMING OUT OF THE POCKET, ULTIMATELY, OF THE MILLER. We sincerely hope that you millers will be strong enough to resist altogether this attempt to throw upon you a charge which rightly belongs to them.

The London Flour Trade Association has taken this matter up and together with the Glasgow and Liverpool Associations has forwarded to your Association a proposed Bill of Lading drawn up in the interests of all classes; by which at any rate *some* of the difficulties may be obviated if we can only succeed in *interesting millers on your side* in this *most necessary* reform and impressing them with the IMPORTANCE OF SAME."

These facts are submitted through the courtesy of the milling press to all millers interested in exporting their product. The receiver is willing to cry "fire," but is evidently unable or unwilling to either carry water or "man the brakes." It is therefore left for our millers to take the prompt and efficient action necessary to put out the "fire."

The London Flour Trade Association might reasonably be expected to resist any imposition of this kind at their own threshold, in the interest of their shippers, but like the receiver, they are perfectly willing to shift the burden from their own to other shoulders.

If the contemplated arrangement is carried out, the exporting miller is burdened with another expense amounting to about 2 1-5 cents per bag of 140 lbs., or \$30 per day to a mill turning out 1000 barrels. Are you willing to quietly submit and allow this tax to be loaded upon you in the interest of the steamship company?

I trust this effort to still further reduce the little margin left to the miller will cause an increased attendance to every meeting of millers for the general good, be it *local, state or national, realising the fact* that every success which has been achieved in the line of reform or protection to the milling interest has been through united effort.

Respectfully,

S. H. SEAMANS, Sec'y.

P. S.—Since the foregoing was put into the hands of the printer, the following cablegram has been received from Glasgow:

"Tension continues between receivers and shipping companies, regarding landing charges, as President of the Millers' Association officially resist threatened reinsertion in the Bills of Lading the master portorage clause.

ON BEHALF OF GLASGOW TRADE."

This is but another intimation to the Association that our foreign receivers have no idea they will be able to cope with any of the many innovations which are being "cooked up" to hamper the American miller in getting his product from "mill to market." In calling the attention of millers to these matters, I cannot too firmly impress upon them the necessity of united action. Do not leave the entire work and responsibility to the Executive Committee, as *they must have the backing of local organizations* to carry out successfully any reform.

S. H. SEAMANS, Sec'y.

COMPRESSED AIR POWER.

An engineering scheme of a novel character and one fraught with important consequences for power-users in all parts of the country is now, at length, after many hindrances and delays, in fair way of being realized by the approaching completion of the first part of the works of the Birmingham (Eng.) Compressed Air Power Company, limited. There is nothing absolutely new, of course, in the employment of compressed air for motive purposes. In Paris, Popp's system, covering an area nearly equal to that undertaken in Birmingham, has been in operation over five years, for the synchronic working of clocks. At Eastbourne, Warrington, Southampton, and other places, compressed air is used in connection with a pneumatic drainage system. In Liverpool blocks of warehouses are fitted up with hoisting apparatus, worked by the same convenient and docile power, and in many collieries and private works in various parts of the country it has been found advantageous to discard more modern motive agents in favor of this primitive propelling force. Birmingham, however, is the first place in which it has been adopted as a common motive-power, supplied from a central source for driving general machinery, and its application here, therefore, is distinctly a new departure involving important and far-reaching issues. It is about four years since the present project assumed shape, and more than twelve months have elapsed since the works' contracts were placed, but the company have had many unforeseen difficulties to contend with, not wholly of a financial or engineering kind. Parliamentary powers had to be obtained, the local authorities propitiated, the opposition of vested interests overcome or appeased at every step, and even the requirements of the municipality for safeguarding the network of gas and water pipes, sewers, and tram lines with which the streets of the town are intersected, have added not a little to the embarrassments of the promoters. Now, however, that the experimental works are at length, within a measurable distance of completion, it is evident that, however bold and novel the undertaking, there is nothing chimerical or impracticable about it, and that, whatever the ultimate commercial results, the mechanical and engineering problems involved are comparatively easy of solution.

There is clearly no reason why driving-power should not be supplied from a common centre, in the same way as gas, water and electricity, and compressed air seems to offer many advantages for this purpose over steam and other motive agents, which are subject to heavy waste in transmission, or require new and costly appliances. In the first place, air can be applied to existing engines without necessitating any change of plant or other expense beyond that incidental to connection with the air mains, and this cost is more than counter-balanced by the gain in getting rid of boilers and furnaces, with their necessary attendants. Then in place of smoke, exhaust steam, ashes and condensed water, the only waste of the pneumatic system is pure air, which can be used to assist the ventilation of workshops, as well as to expedite many manufacturing processes in which atmospheric currents are needed. With a stream of compressed air constantly laid on, and available at any moment by the simple turning of a tap, no time need be lost nor fuel expended in getting up steam. The wear and tear of boilers, firebars, etc., is entirely obviated; no cleansing of flues, removal of refuse, or insurance of boilers is needed; the risk of boiler explosions and of the bursting of steam pipes in frosty weather entirely disappears; the smoke nuisance is abolished; and last, but not least, the power is supplied on terms with which neither steam nor electricity can pretend to compete. How far the company are correct in their calculations experience only can determine; but if it be true that they can afford to supply compressed air at a rate equivalent to a little over £13 per indicated horse-power per annum, as against the general average here of £17 13s. 8½d. per indicated horse-power for all engines up to twenty-five nominal horse-power, the money-saving offered by the substitution of the new for the old motive agent, should be something like 20 per cent. That is to say, for every owner of an engine estimated for rating purposes at twenty nominal horse-power, or sixty indicated horse-power, the saving per annum should not be less than £200, to say nothing of the gain in space, comfort, cleanliness, etc. From the user's point of view, these are certainly potent arguments in favor of wind as compared with steam.

SHE TOOK THE HEN.—Young Mrs. Popinjay (at market for the first time)—"Are you sure this chicken isn't an old hen? It feels very tough."

Marketman—"I can assure you ma'am, that fowl is very young." (Opening the bill of the bipe,) "See—it hasn't a single tooth yet."

Mrs. Popinjay takes the hen.—*Burlington Free Press.*

SOME years ago Phil. Armour, the Chicago millionaire, was figuring in a big real estate transaction. The sharpers thought they had him, but were soon convinced that they were wrong. They had tried to get him to drink several times while the dicker was going on, but he was not drinking any. After the deal was over Phil. said to the chaps he had gotten the best of: "Now, gentlemen, you must have something with me, and taking them into a small room where there was a pitcher and several glasses, he opened a little tin box and said: "Help yourselves." The tin box contained seidlitz powders.

UNITED STATES MILLER.

E. HARRISON CAWKER, EDITOR.

PUBLISHED MONTHLY.

OFFICE, NO. 124 GRAND AVENUE, MILWAUKEE.

SUBSCRIPTION PRICE—PER YEAR, IN ADVANCE.

To American subscribers, postage prepaid..... \$1.00
 To Canadian subscribers, postage prepaid..... 1.00
 Foreign subscriptions..... 1.25

All Drafts and Post-Office Money Orders must be made payable to E. Harrison Cawker.

Bills for advertising will be sent monthly, unless otherwise agreed upon.

For estimates for advertising, address the UNITED STATES MILLER.

[Entered at the Post Office at Milwaukee, Wis., as mail matter of the second-class.]

MILWAUKEE & CHICAGO, FEB., 1888.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

BURNHAM BROS., York, Pa., say orders for their Turbine wheel have doubled since selling direct to mill owners at net prices. Send for catalogue.

THE citizens of Windfall, Ind., want a good roller mill at that place, and among other inducements which they offer is that of free natural gas.

SEC'Y HALIDAY, of the Indianapolis Board of Trade, furnishes the U. S. MILLER with the following statement:

"The daily capacity of Indianapolis flouring mills is about 3,000 barrels. Manufactured during 1887 about 500,000 barrels. Storage capacity of grain elevators, 1,000,000 bushels."

A NEW and perfect Bill of Lading for the Export trade appears now to be of paramount importance. It will necessarily take some considerable time to get a form that will be satisfactory to the exporter, the transportation companies and the importer, but no doubt it can be done, and the interest in the matter now seems to be so thoroughly aroused that it will be done. The circular of Sec'y Seamans, of the Millers' National Association, on this subject in another column will be read with interest.

THE Michigan railroads are considering the advisability of selling 5,000-mile tickets at two cents per mile. Why should a move of this kind be limited to Michigan railroads? Why would not a 5,000 mile ticket good on any road in the country fill a want long felt? The railroads may have valid objections to a move of this kind, but we think the commercial traveling public or the tourist would take to it like a duck to water.

THE report of the governor of Utah Territory to the U. S. secretary of the interior for 1887 says in relation to flouring mills: There are in Utah 120 flouring mills, 10 of which are roller, or new process. The product of the best of these is not excelled in quality by any in America. The aggregate capital invested in this industry is \$1,375,000; the annual product is 109,840,000 pounds of mill

stuffs, valued at \$2,288,000. Such is the extent of our flouring mill interests that nearly all of these mill are in operation the year round. In addition to these there are mills for the manufacture of oatmeal, rolled oats, cracked wheat, hominy, pearled barley, and and other farinaceous goods.

CAWKER'S AMERICAN FLOUR MILL AND GRAIN ELEVATOR DIRECTORY FOR 1888, just issued (published by E. Harrison Cawker, Milwaukee, Wis.), shows the number of flouring mills in the United States and Canada by States and Provinces as follows:

FLOUR MILLS IN THE UNITED STATES.

| | | | |
|---------------------------|-----|---------------------------|--------|
| Alabama..... | 192 | Mississippi..... | 189 |
| Arizona..... | 9 | Missouri..... | 815 |
| Arkansas..... | 215 | Montana..... | 14 |
| California..... | 158 | Nebraska..... | 270 |
| Colorado..... | 48 | Nevada..... | 11 |
| Connecticut..... | 177 | New Hampshire..... | 142 |
| Dakota..... | 121 | New Jersey..... | 343 |
| Delaware..... | 68 | New Mexico..... | 18 |
| District of Columbia..... | 3 | New York..... | 1521 |
| Florida..... | 29 | North Carolina..... | 431 |
| Georgia..... | 324 | Ohio..... | 1068 |
| Idaho..... | 15 | Oregon..... | 126 |
| Illinois..... | 742 | Pennsylvania..... | 2180 |
| Indiana..... | 745 | Rhode Island..... | 34 |
| Indian Territory..... | 3 | South Carolina..... | 193 |
| Iowa..... | 529 | Tennessee..... | 498 |
| Kansas..... | 439 | Texas..... | 451 |
| Kentucky..... | 496 | Utah..... | 88 |
| Louisiana..... | 19 | Vermont..... | 168 |
| Maine..... | 194 | Virginia..... | 471 |
| Maryland..... | 231 | Washington Territory..... | 54 |
| Massachusetts..... | 244 | West Virginia..... | 313 |
| Michigan..... | 6-8 | Wisconsin..... | 634 |
| Minnesota..... | 349 | Wyoming Territory..... | 2 |
| Total..... | | | 16,062 |

DOMINION OF CANADA.

| | | | |
|-----------------------|-----|---------------------------|-------|
| British Columbia..... | 7 | Ontario..... | 918 |
| Manitoba..... | 44 | Prince Edward Island..... | 16 |
| New Brunswick..... | 104 | Quebec..... | 479 |
| Nova Scotia..... | 66 | | |
| | | | 1,634 |

The total number of mills in the United States reported in the 1888 milling directory was 16,950 and in Canada 1,634. The number of mills in operation has slightly decreased, but we believe the total capacity for the manufacture of flour to have increased. A number of large mills have been built and many have increased their capacity. The oatmeal, corn mills, etc., which were heretofore included in the regular list of flouring mills, are in the present list eliminated and are noted in lists by themselves. As it is, the milling capacity of the country as a whole is greater than there is a demand for.

IN the January number of the UNITED STATES MILLER we republished an article contributed by W. A. Thoms, of Scotland, to *The British Baker, Confectioner and Purveyor* (London), entitled, "A Case of American Flour Shortage." We publish the reply in this issue. The article implied serious charges against a Milwaukee miller, facetiously called "Ah Sin," i. e. a shortage on 457 out of a shipment of 1,000 bags. The article, as republished, has attracted much attention among American flour exporters, many of whom have suffered outrageously by the exactions of tricky importers on the other side. While the world stands, there will no doubt be dishonest men in all lines of trade, but we believe the milling and grain trade generally to be as free of dishonest or questionable practices as any branch of business under the sun.

If a shipment of flour by an American miller falls into the hands of a dishonest importer, it is an easy matter for him to make unwarrantable charges and demands for damages, and such has been the case. For instance, we know of a case in this city where the weight of every sack was carefully

registered and samples reserved for comparison in case of any claims being made for damages, and claims were made for shortage in weight and variation from samples. In this case the exporter was prepared and refused to allow a cent for damages claimed, and DEMANDED an investigation by the British arbitrators, who failed to find the claims sustainable. In regard to the shipment made by "Ah Sin," we do not by foregoing remarks desire in the least to imply that the importer was dishonest, but if the statement made by Mr. Thoms is correct, as we say in this country, "there certainly is a screw loose somewhere." *The shortage must have occurred at one end or the other of the line or in transit.* The difficulty is to ascertain, where.

For this and other purposes equally valuable to the American flour exporter the Millers' National Association have long contemplated and we hope may soon put in operation a bureau which cannot but prove of inestimable value to both exporter and importer. The members of the Association have had these abuses brought to their attention so often that OVER THREE YEARS AGO THEY HAD SPECIAL WORDS ADDED TO THE CABLE CODE BOOK most frequently used by flour exporters and importers to meet their wishes for expression in cases such as had occurred or were liable to occur.

There is one thing that should be thoroughly understood, and that is *that every dishonest exporter hurts every honest exporter and every dishonest importer hurts every honest importer.* Black list them, say we.

A CASE OF AMERICAN FLOUR SHORTAGE.

REPLY OF "AH SIN."

Editor United States Miller:

Dear Sir—In the January number of the UNITED STATES MILLER you republished an article with the above caption. Will you kindly oblige me by inserting my answer herewith enclosed in your widely circulated and valuable journal, and oblige
 AH SIN.

February 14th.

MY DEAR MR. W. A. THOMS:

You were introduced to me by an article in the *British Baker, Confectioner and Purveyor* as an amateur writer, whose specialty is the humane work of controlling the morals of the people in the flour business. Such an humane undertaking is quite commendable, and if properly done, cannot fail of good effects. The story of the flour dealer who ordered light weight for a corresponding reduction in price, so that he could beat all his neighbors, was quite interesting. That fellow must have died soon, else we would have heard more of him. Through the kindness of our mutual friends, Messrs. A. & L., you read one of my letters to them, which fact initiated our acquaintance; I wish that you could have read all our correspondence, so that our acquaintance would have been more complete. I call your attention specially to my letter of August 23d, and their answer Sept. 10th. I will quote a part of the letter in case they did not take a copy of it. It says: "Many thanks for your liberal treatment." The rest of the letter would not interest you.

Allow me, dear Mr. Thoms, to express my opinion that you could devote your valuable time and efforts more usefully than by turning your attention to the doings of the American millers. They can afford to be honest, because they are excellent mechanics and fearfully hard workers, and they do as much work in one hour as others in four. Now consider that they work 24 hours every day and if you learned some figuring you will get at the result. This is the reason why you get the flour so cheap from them. Of course they are also apt to make mistakes, and if proved

to them, they are willing to pay for the damage. I would also not hesitate a moment to pay that little bill of *Five Pounds* for the shortage on the 1000 bags "Starlight," if I was to blame for it, but I know that it is not my fault and so, Mr. Thoms, it would be wrong on my part to pay it under such circumstances, because it would mislead you in your humane undertaking. Let me tell you why I am so positive that I am not to blame for this shortage: The weighing in my mill is done in the same way as probably in most of the merchant mills of this country. The packages are weighed on a small Fairbanks platform scale of 400 lbs. capacity with a very sensitive balance beam. The weight is screwed down firmly for 140-lbs. packages on the 40-lbs. notch in the beam. Any difference between $\frac{1}{2}$ lb. and lighter would let the balance go down, and overweight within $\frac{1}{2}$ lb. would likewise raise it up. If the weight on the notch were not fastened firmly to the beam, it could not fail to be noticed by the packer, because it would shift every time the flour package is placed on the platform and the balance beam would rise. The packing at my mill is done by a day crew and night crew changing off every twelve hours. The foreman of the packing department weighs every morning some bags of the night packing; during the day time the weighing is done under his eyes. My head-miller weighed at irregular times about once a week some of the packages and did not report any great differences. Sometimes a few bags $\frac{1}{2}$ to $\frac{1}{4}$ lb. under; but also as much overweight—too slight differences to find fault with the work of the packers. I do not think that a better set of employees could be found than in my mill. They are sober, cheerful and reliable. They are well paid and therefore contented. Only three changes happened in the last four years. One of them on account of old age, another changing from laborer in my mill to teaming for my mill, but not now in my employ. The 1000 bags "Starlight" were made during two days and two nights run of the mill; therefore both the day and night men must have done wrong weighing, and at different times; and if they had been careless in weighing, it is not to be presumed that the difference would show only in one way—that is only *underweight*. Do you not think, dear Mr. Thoms, that some bags would show overweights? Please think it over and you will find that mistakes alone could not have caused so much shortage. Dismissing the idea of carelessness, only one more point has to be looked into and that is, stealing or dishonesty. This could be done by the employees for their own benefit alone or in collusion with the employer. Now Mr. Thoms, does it not occur to you as improbable, that the employees, if bound to steal, would take the unnecessary trouble of taking out of each bag a few pounds and put the small stealings in one bag, if they could do it so much easier, stealing whole packages? The chances for detection are less in the latter way than in the former. This would not work long and profitable, and does not help you in your investigation.

The theory of collusion, speaking the detectives' language, does not seem to be tenable. It is not likely that a manufacturer would go to his employees and tell them: "you weigh the packages short 3 to 5 lbs." All the discipline and authority so essential for the successful management of any factory would be surrendered at once, and no establishment could exist under such mismanagement.

Now comes the bag question. I inclose herewith a certificate from the manufacturer of the bags which I used for the 1000 bags of "Starlight," by which certificates you will find, Mr. Thoms, that I used the best quality bags, known as the 1st Grade weighing from 14 to 15 ounces, Gilroy's make. Of over one hundred thousand bags sent out by me during 1887 I had two complaints reported on each 1000 bags for shortage, both complaints from Glasgow, but I do not believe that the shortage happened through poor quality of the bags. These are the circumstances under which the 1000 bags "Starlight" have been shipped out. Now, my dear Mr. Thoms, let us examine how the flour arrived in Glasgow, and the conclusion drawn by you therefrom.

It excited the writer's suspicions right away, because the name of the miller was no

on the bags. My dearest Mr. Thoms, *don't you know better?* The importers would not allow us to put on our own names, because if we did, they could not buy the flour any more from Tom, Dick and Harry. There is a line of work for you, Mr. Thoms! teach the importers to have miller's name on the bag, so that he gets some of the credit due him for doing good work. Now it hardly pays, because we cannot retain the trade, if you do not always make the lowest price.

You stated the short-weights as follows:

| | |
|-------------------------------|--|
| 12 bags from 19, 17 to 6 lbs. | |
| 10 " 5 lbs. | |
| 122 " 4 " | |
| 250 " 3 " | |
| 65 " 2 " | |

457 bags falling short;

balance to be presumed to have held out weight. You think, Mr. Thoms, that the big shortages do not make the case suspicious. You believe that these big shortages happened undoubtedly because the bags were torn or burst. You did not say that anybody ascertained, whether 12 or more or any bags had been torn or did burst and why this happened. It seems to me, Mr. Thoms, that you did not have a very good basis for your presumption, that only and just 12 bags with big shortages were torn and burst. I think you should not have drawn such a distinct line without any information of facts. Might not some of the other bags have been misused during transportation? There is another field for your humane disposition. Whenever you hear of another big shortage you could investigate, in what condition the flour arrived, through whose hands the flour passed after arrival and so on. You will soon find out yourself how to proceed and if there is any expense to it you will find almost every American miller will pay his share; *I promise you to pay my share.*

And now, my dearest Mr. Thoms, I cannot possibly chat any longer with you and pray do not ask any more such letters from me. You may believe me, my regular work does not allow me sufficient time for it.

Good bye.

Yours faithfully,

AH SIN.

The following is the certificate above referred to, and original can be seen in my office at any time.

Jan'y 30th.

To Whom it may concern:

We hereby certify that we have sold to ——— Mills, 140 lbs. Export Sacks for a number of years, and we always supplied him with our best quality, such as is known in the trade as F Grade, weighing from 14 to 15 ounces each, and made from Gilroy's best mangled goods, which are understood by all users of Burlaps to be the best article in the market for making Jute export sacks.

JOHN F. BAILEY & Co.,
22 South-sixth st.,
Philadelphia, Pa.

[Compiled from official records, for the UNITED STATES MILLER.]

FLOUR MANUFACTURED IN ST. LOUIS IN 1887.

| | NAME OF MILL. | BBLs. |
|----------------------------------|--------------------|---------|
| Geo. P. Plant Milling Co. | Plant's Roller (S) | 260,338 |
| Regina Flour Mill Co. | Regina | 220,993 |
| Kauffman Milling Co. | Anchor (1) | 184,442 |
| Kehler Bros. | Kehler | 181,982 |
| Camp Spring Mills Co. | Camp Spring | 172,729 |
| Kel or Bros | Laclede | 130,626 |
| Victoria Flour Mill Co. | Victoria | 127,003 |
| Helzel Milling Co. | East St. Louis | 112,613 |
| E. O. Stanard Milling Co. | Park (5) | 110,649 |
| Hessinghaus Milling Co. | Jefferson | 99,150 |
| E. O. Stanard Milling Co. | Eagle (4) | 89,086 |
| E. Goddard & Sons Flour Mill Co. | United States | 77,250 |
| Kauffman Milling Co. | Park (3) | 69,589 |
| Saxony Mill Co. | Saxony | 54,000 |
| H. B. Eggers & Co. | Meramec | 48,003 |
| Lallemant Milling Co. | Carondelet | 27,287 |
| Hy Kalbfleisch & Co. | St. Georges | 20,000 |

Total 1887.....1,985,717
" 1888.....1,807,956
" 1885.....1,841,529

- (1) From July 1st.
- (2) From Jan'y 1st to June 15.
- (3) For 10 months.
- (4) To June 6, mill burned.
- (5) From July 1st.

WHEN the Keely motor successfully motes, when a man serenely in atmosphere floats, when Yankees are brought to the eating of oats, when motion perpetual shall be achieved, when cyclone pulverizing is proved and believed and when grinding pneumatic is else than conceived, we shall look to see some inventor successfully utilizing the power of Niagara River at its exit from Lake Erie. Meanwhile said inventors are wilting their collars in struggling to acquire the Buffalo prize of \$100,000!—*The Milling World* (Buffalo, N. Y.)

PUBLICATIONS RECEIVED.

THE *Art Amateur* for February gives a delightful colored portrait study of a little girl, by Ellen Welby; decorations for a plate (La France roses), a lamp (sun-flowers), and a fish plate; a striking study of orchids, by Victor Dangon; numerous models for wood-carving, etc. An article on beds is profusely illustrated, as is one on dogs. The Moran and Buhot etching exhibitions are reviewed, and all departments of the magazine are ably sustained. Price, 35 cents. Montague Marks, 23 Union Square, N. Y.

WITHOUT doubt the most valuable contribution in *Harper's Magazine* for March, from the point of view of the greatest number of people, is Charles Dudley Warner's opening study of "The Great West—A Far and Fair Country." In his graceful, easy style Mr. Warner sweeps across the great Northwest from Minneapolis to Great Falls, and carries his reader along so pleasantly that one is never weary despite the distance. The facts and statistics presented are none the less instructive for being given in an entertaining way. Every intelligent man and woman will be interested in Mr. Warner's study—those in the East because it will teach them something, and those in the West because they will see themselves faithfully photographed therein. It follows, of course, that Mr. Warner's article is not free from criticisms; but fair, generous, intelligent criticism is agreeable to Western people. The value of the contribution is further enhanced by a particularly good map, based upon a map in *The Railway Age*.

GODEY'S LADY'S BOOK

FOR 1888.

Sample Copy Fifteen Cents.

\$2 a Year ALWAYS IN ADVANCE.

A handsome Engraving to every Subscriber.

In Club with this paper, GODEY'S and the UNITED STATES MILLER, price \$2.50, which should be sent to the office of the United States Miller, Milwaukee, Wis.

MILL FOR SALE.

For Sale: One-half interest in a first-class 125-barrel Roller Mill. Has the latest improvements and doing a class of work that cannot be excelled in the State. Mill is situated in Southern Illinois, on Wabash Railroad, and in a good wheat country. Party desiring to sell his interest is obliged to go to Europe. The complete mill will be sold if desired. Address for full particulars, H. P., care Garden City Mill Furnishing Co., Chicago, Ill.

MILL FOR SALE.

A good 75 bbl. Roller (and Stone) process Mill for sale, located at Paola, Kansas, with good switch privileges. Can be run with Natural Gas. Terms easy. Address

GRIFFITH & PRICE, Kansas City, Mo.

TESTS ON SPRING AND WINTER WHEATS.

Prof. V. Strebl, of Hohenheim, Germany, has been making some tests on winter, spring and spelz wheats with a view to determining their relative gluten contents. The wheats are stated to be those most in demand in trade; but no mention is made of American wheats and it is doubtful whether these were tested. The experiments were made on parcels of 110 lbs. wheat submitted to the milling process. Owing to the milling plant employed the results had to be limited to three grades of flour. In per centage of output the various grains tested yielded as below:

| Variety. | Grade 1 | Grade 2 | Grade 3 | Brn. Less. | yield. | Average | Variation. |
|-----------|---------|---------|---------|------------|--------|---------|-------------|
| Winter... | 45.20 | 22.73 | 11.79 | 18.15 | 2.13 | 79.92 | 78.41-84.02 |
| Spring... | 46.06 | 20.74 | 12.00 | 19.83 | 1.87 | 78.80 | 76.83-81.33 |
| Spelz... | 42.01 | 18.91 | 15.48 | 20.85 | 2.75 | 76.40 | 72.90-79.62 |

To determine the gluten contents and baking qualities of each variety, flour No. 1 was subjected to tests in the aleurometer invented by Kunis. Great variations were evident between the flour even while the dough was being prepared, in respect to the amount of water required to make an equally stiff mixture. Also in washing out the gluten, for while from most samples this was easily obtained, in others the result was a more or less fluid mass, from which very little gluten could be separated. When secured, the properties of the gluten also varied much as to toughness, extensibility and color—differences which must be attributed to their varying composition. In the flours rich in gluten, the dry contents were considerably smaller than in others. The amount contained by the winter wheat samples varied between 17.8 and 36.6 per cent. Flour whose gluten contents marked less than 25 degs. by the aleurometer was too weak to be baked advantageously by itself. Among the spring wheat flours the gluten contents were highest in the Russian Saxonska wheat, varying between 20.1 and 41.9 per cent. The results were almost the same with spring and winter Shirriff wheat, though the baking tests showed the former to possess considerably better baking qualities. In deciding what wheat is most worthy of cultivation, Prof. Strebl remarks that it is necessary to take into account the quantity and quality of the yield, also the hardihood of the variety. But a combination of very high yield and quantity and quality of gluten contents is not as yet to be found in any variety of wheat. The wheat which is richest in gluten may not be the most valuable in baking, the latter depending on the proportion in which its proteine elements are present.—*Millers' Gazette* (London.)

INDIAN BREAD.

A friend of the UNITED STATES MILLER has sent us the following, from the diary of Mrs. Ellen Goodnough, wife of a missionary to Oneida Indians, dated June 5, 1886:

"This morning I called a few girls into my kitchen to teach them the art of making yeast and bread. Many of the Indian families now use wheat flour. Ten years ago they only used it on great occasions, and at their feasts. Their own common bread is very hard to make, and indigestible for those who are not accustomed to it. It is made of white maize. The corn is shelled; boiled for a few minutes in strong lye; then washed thoroughly in cold water until the hulls come off. They have a mortar in each house made by burning a hollow in a

hard-wood log about three feet long; the maize, freed from its hulls, is then pounded into flour by a wooden or stone pestle; it is afterwards sifted through a sieve made of very fine strands of bark; it is then mixed with boiling water and kneaded into round flat cakes, which are baked in the ashes of the fire-place, or boiled like dumplings for an hour or more. Whole beans or dried berries are considered an improvement. The Indians declare that this bread of theirs will sustain life longer than any other article of food."

NONSENSE.

"Ah, those autumn leaves, Farmer Robinson," sighed his city guest. "What lovely tints of color, and what an addition they are to the charming scenery you must so enjoy." "Yes, miss. The leaves are 'gettin' a good deal of yellor and red onto 'em, that's a fact. It's about time to gather—" "Then you really find time to gather autumn leaves?" "Oh, yes, indeed. We rake up a few cart-loads every year for beddin' for the horses." Another æsthetic dream smashed.

A PARISIAN relates that he had cut a slice of excellent Roquefort cheese, densely populated, and was about to swallow a mouthful, when a gentleman who had been sitting opposite rose suddenly from his seat, snatched the plate away, and exclaimed, most indignantly:

"You shall not eat this in my presence, sir!"

"Indeed! Why not, pray?" asked the astonished feuilletonist.

"Sir, I am a member of the Society for the Prevention of Cruelty to Animals!"

A SAFE INVESTMENT.—Omaha Youth—Yes, I am thinking of opening a notion and fancy goods store!

St. Louis Savant—Don't do it. Take the advice of an older man than yourself and keep out of lines in which values fluctuate. Fashions change, my boy, and prices change with them.

"I know, but I shall keep only standard articles."

"Won't do. There is no telling how soon the whims of the public may leave the so-called standard articles on your shelves. If you want to succeed don't deal in luxuries; deal in necessities, things people can't live without and which can't be affected by every breeze from Paris."

"You mean that I should sell groceries?"

"Groceries! No. Whiskies."—*Omaha World*.

Miss SAWYER, who is poor, was introduced at a lunch party to Miss Taylor, who is rich, and was coldly received. Miss Sawyer is bright and knows her own antecedents and Miss Taylor's also. She was unabashed and spoke cheerily: "I am so glad to meet you. I have often wanted to. It's so funny—my name is Sawyer and my grandfather was a tailor, and your name is Taylor and your grandfather was a sawyer. Mine used to make clothes for yours, and yours used to saw wood for mine."

THE ARTLESS CHILD.—Mamie (six years old to lady caller)—Mamma said to ask you to sit down a few minutes and she would be right in. It isn't raining, is it?

Lady Caller—Why, no, Mamie. Why did you think it was?

Mamie—Because, when mamma saw you coming, she said, "it never rains but it pours."—*Texas Siftings*.

AN UNJUST CRITICISM.—Countryman (in a Bowery picture gallery)—The cows is all right, an' the trees look kinder nateral, but the river there behind 'em is painted mighty poor.

Dealer—If you are up in art at all, my friend, you will know it is impossible to make water and oil mix well.—*New York Sun*.

A NATURAL RESULT.—Doctor (feeling patient's pulse)—You are suffering, sir, from nervous prostration in a very aggravated form. Have you been drinking deeply of late?

Patient (feebly)—No, sir; I've been Christmas shopping with my wife.—*Epoch*.

SHE WAS FROM BOSTON.—Cadet (vain-gloriously)—I'm afraid we fighting men are too susceptible, Miss Brenton.

Miss Brenton—Yes; how awfully susceptible Mr. Smith was to Mr. Kilrain, wasn't he?

A GIRL EASY TO SUIT.—A picture of a handsome young man is stowed away in a neglected corner of a portrait painter's studio up-town. The artist was asked whom it belonged to, and he replied:

"Just before starting on a trip across the water I received an order for that picture from the young lady to whom the original was betrothed. As there was apparently no hurry about the work, I suggested that it should be done at my leisure while abroad. This being agreed upon, I had no further communication with the party until my return a year and a half later. When I called upon the lady and informed her that the picture was ready, she seemed slightly embarrassed, but promised to call at the studio and see it. A few days later she came, and, after gazing steadily at the canvas for some time, she sighed and said:

"'Poor Phil! he's dead and gone!'

"Then with a sudden look of relief and inspiration, she added:

"'But I think if you could change the expression slightly and alter the mouth, it would be a good likeness of Mr. C——, the gentleman I am now engaged to!'

"I kept the picture as you see. To have allowed that cold-blooded heartless woman to take possession of it would have seemed an insult to the dead man's memory. So there it always hangs, a sort of illustration of poor, old Rip's words: 'How soon we are forgot!'"—*New York World*.

WAS RELIEVED.—An Ohio editor was interrupted by a boy who entered his room.

"What do you want?" the editor darkly frowning, demanded.

"I have come to tell you, sir, that your wife run away with a shoemaker."

"Oh, is that it? I thought that the foreman had sent for more copy."—*Arkansas Traveller*.

STICKING TO THE FACTS.—Attorney (defending a prisoner)—Your honor, I would call the attention of the court to that noble utterance of the Master, "Let him who is without sin cast the first stone" and—

Judge (interrupting)—You will confine your argument, sir, to the testimony. It wasn't a stone the prisoner threw at the witness, but a brick.—*Washington Critic*.

Improved + Walsh + Double + Turbine

This wheel has a perfect fitting cylinder gate and draft tube combined, and allows no water to escape when closed.

POWER GUARANTEED

equal to any wheel on the market using equal amount of water. Address for particulars,

B. H. & J. SANFORD,

Phoenix Iron Works,
Sheboygan Falls, Wis.

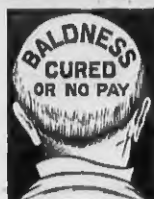
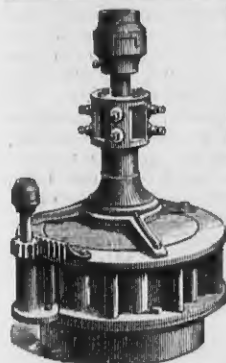
The "HOPEWELL" TURBINE**Water Wheel**

IS THE BEST.

For full particulars address

A. J. HOPEWELL,

EDINBURG, VA.

**WE MEAN WHAT WE SAY!**

BALD SPOTS We guarantee to cure these or make no charge.
THIN HAIR
DANDRUFF Send for particulars of our remedy.
THIN BEARD
FALLING HAIR
H. A. FECHTER & CO.,
New Haven, Conn.

Send this to some bald headed friend.

EVERYBODY'S PAINT BOOK

A new work on INDOOR and OUT-DOOR painting which is intended to teach people how to DO THEIR OWN PAINTING and save the expense of a professional painter. The most practical and valuable work of the kind ever issued. Full directions are given for mixing paints for ALL PURPOSES. Tells all about PAPER HANGING, KALSOMINING, STAINING, VARNISHING, POLISHING, as well as how to RENOVATE FURNITURE, so that it will look as good as new. Tells all about HOUSE-CLEANING with paint and kalsomine. Full directions are given for making the beautiful SPATTER-WORK pictures in which the ladies are so much interested. Tells how to paint OUT-BUILDINGS, ROOFS, FARM WAGONS, FARM IMPLEMENTS and CARRIAGES as well as how to polish a PIANO or ORGAN; how to imitate GROUND GLASS or make paint for BLACKBOARDS; GRADING in oak and black walnut, painting in imitation of EBONY, MAHOGANY and ROSEWOOD stain, GILDING, BRONZING and SILVERING. Beautifully printed, beautifully bound. Will SAVE ITS COST by mail on receipt of price and the list.



We will send a copy of the UNITED STATES MILLER for one year, and a copy of "EVERYBODY'S PAINT BOOK," post paid, to any address, for \$1.50. Address E. HARRISON CAWKER, No. 124 Grand Avenue, Milwaukee, Wis.

FOR SALE

10,000 Acres of Hardwood and Agricultural Lands near Lake Superior, AT \$3.00 TO \$5.00 PER ACRE, 4,000 acres in the Iron River County, at low rates.

A RARE OPPORTUNITY FOR A GOOD FIND.

IF YOU WISH TO BUY

CITY PROPERTY IN DULUTH, OR PINE, IRON OR FARMING LANDS,

(ADDRESS)

LUCIEN * J. * BARNES,

Room No. 2, Exchange Building,

DULUTH, MINN.

THE STANDARD OF EXCELLENCE EVERYWHERE

EUREKA

GRAIN CLEANING MACHINERY

OVER 24,000 IN USE

BUILT ONLY BY HOWES & EWELL SILVER CREEK N.Y.



THE HARRISON CONVEYOR.

HARRISON CONVEYOR.

Clean Work. No Mixing of Grain.

FOR HANDLING

Grain, Coal, Sand, Clay, Tan-Bark, Ores, Wet, Dry or Crown Malt, Seeds, Shavings, Sawdust, Lime, Hair, Cement, Cotton Seed, etc., etc.

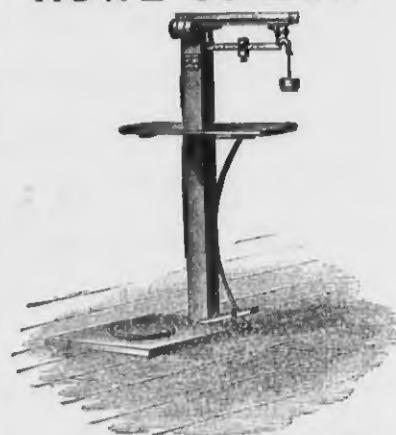
Write for Catalogue and Grain Dealers' Ready Reckoner.

BORDEN, SELLECK & CO., General Agents,

48-60 LAKE STREET,

CHICAGO, ILL.

[Mention U. S. MILLER when you write.]

HOWE SCALES.

ALL KINDS OF MILL AND ELEVATOR SCALES.

MACHINERY FOR SALE CHEAP!

2 24-inch Middlings Mills, almost new.

1 Millstone Dresser, almost new.

8 Pair 48-inch Burr Millstones. New.

1 Pair 9 x 18 Smooth Rolls. New.

1000 Pieces French Burr Millstone Blocks, extra quality.

FOR PRICES ADDRESS

THE FILER & STOWELL CO.,

MILWAUKEE, WIS.

Mill Furnishers and Manufacturers and Dealers in Flour Mill and Grain Elevator Machinery and Supplies.

Harrington & King Perforating Co, Nos 224-226, N Union st, Chicago, Ill.
Robt Aitchison Perforated Metal Co, No 76 Van Buren st, Chicago, Ill.
Huntley & Hammond, Silver Creek, N Y, bolt-cloth and mill machinery.
James Leffel & Co, Springfield, O, water wheels and engines.
A F Nagle, automatic sprinklers, 115 Monroe st, Chicago, Ill.
A S Cameron Steam Pump Works, foot E 23d st, New York, N Y.
Cranson, Huntley & Co, buckwheat and grain cleaning machinery, Silver Creek, N Y.
Aug Heine, Silver Creek, N Y, flour mill machinery.
Poole & Hunt, Baltimore, Md, water wheels, mill and elevator machinery, engines, etc.
C O Bartlett, 67 S Water st, Cleveland, O, grinding mills, magnetic separators, etc.
Albert B Bowman, 833 N Second st, St Louis, Mo, wheat heaters.
Richmond Mfg Co, Lockport, N Y, grain cleaning machinery and bran dusters.
Bradford Mill Co, Cincinnati, O, milling machinery.
Todds & Stanley Mill Furnishing Co, Nos 917-919 N Second st, St Louis, Mo, mill builders.
Edw P Allis & Co, Milwaukee, Wis, mill builders, etc.
Knickerbocker Mfg Co, Jackson, Mich, dust collectors.
M Deal & Co, Bucyrus, O, grain cleaners.
B F Starr & Co, Baltimore, Md., flour bags.
Dehner-Wuerpel Mill Building Co, Nos 1609-1617 S Third st, St Louis, Mo.
W J Clark & Co, Salem, O, elevator buckets.
Corbett & Norrish, 3346 M st, W Washington, D C, mill builder.
Barnett & Record, No 29 Corn Exchange, Minneapolis, Minn, elevator builders.
Brewster Bros & Co, Unadilla, N Y, roller mills and buckwheat machinery.
Case Mfg Co, Columbus, O, mill builders and manufacturers of mill machinery.
C C Phillips, No 20 S Broad st, Philadelphia, Pa, grinding mills.
Jeffrey Mfg Co, Columbus, O, chain belting.
Geo W Heartley, No 297 St Clair st, Toledo, O, mill picks, etc.
Stillwell & Bierce Mfg Co, Dayton, O, mill builders and manufacturers of mill machinery.
Lippold & Heath, Corry, Pa, cornshellers, etc.
John Hutchinson Mfg Co, Jackson, Mich, corn shellers.
Roller Chain Belting Co, Columbus, O.
R C McCulley, Lancaster, Pa, corn and cob crushers.
T B Wood & Sons, Chambersburg, Pa, corn and cob crushers.
A P Dickey Mfg Co, Racine, Wis, grain and flax separators.
Shumaker Mfg Co, Silver Creek, N Y, corn meal bolt and refiner.
T C Alcott & Son, Mount Holly, N J, water wheels.
Miller Mfg Co, Canton, O, roller mills and boiler feeder.
James McMillan, No 151 North st, Baltimore, Md, manufacturer of hominy mills.
S Morgan Smith, York, Pa, water wheels.
Johnson & Field, Racine, Wis, grain separators.

Straub Machinery Co, Cincinnati, O, corn meal and feed mills.
Flenniken Turbine Co, Dubuque, Ia, water wheels.
York Mfg Co, York, Pa, water wheels and mill machinery.
T B R Feed Mill Co, 61 Jennings av, Cleveland, O.
E H Pease Mfg Co, Racine, Wis, grain separators and car pullers.
Martin's Middlings Purifier Co, Grand Rapids, Mich.
Standard Grain Cleaner Co, Hamilton, O.
Hercules Mfg Co, Cardington, O, wheat and corn scourers, etc.
Samuel Carey, No 17 Broadway, New York, N Y, bolt-cloth and mill machinery.
Weller Bros, Nos 34-36, W Monroe st, Chicago, Ill, mill and elevator supplies.
The Foos Mfg Co, Springfield, O, grinding mills.
John T Noye Mfg Co, Buffalo, N Y, mill builders, etc.
Nordyke & Marmon Co, Indianapolis, Ind, mill builders, etc.
Charles Rakes, Lockport, N Y, mill builder, etc.
Stephen Hughes Mfg Co, Hamilton, O, flour feeders and mixers.
Griscom & Co & McFeely, No 145 N Fourth st, Philadelphia, Pa, mill builders, mfrs of Butler Roller mills, etc.
Wolf & Hamaker, Chambersburg, Pa, mill builders and furnishers.
C Ridgway & Son, Coatesville, Pa, cob crushers, water wheels, etc.
Kniffer Mfg Co, Cleveland, O, mfrs of flour, oatmeal and pearl barley machinery.
Thompson & Campbell, No 1030 Germantown av, Philadelphia, Pa, mill builders, millwrights and mill furnishers.
C K Bullock, Nos 1357-1361 Ridge av, Philadelphia, Pa, mill furnisher.
John C Higgins & Son, No 167 W Kinzie st, Chicago, Ill, mill picks.
J A Gerhart, Easton, Pa, mill stones, grinding mills and bolt cloth.
C N Smith, Dayton, O, mfr of purifiers, miller and millwright.
Allentown Foundry & Machine Co, Allentown, Pa, water wheels.
A W Haag, Fleetwood, Pa, water wheels.
Groff & Strohl, Ephrata, Pa, water wheels.
A J Hopewell, Edinburg, Va, water wheels.
Lancaster Turbine Wheel Co, Lancaster, Pa, water wheels.
E T Cope's Sons, West Chester, Pa, water wheels.
Stout, Mills & Temple, Dayton, O, water wheels, mill builders and furnishers.
T H Risdon, Mt Holly, N J, water wheels.
Webster & Comstock Mfg Co, 125-127 Ontario st, Chicago, Ill.
Union Iron Works, Decatur, Ill, corn shellers, grain cleaning and separating machinery, and mill and elevator supplies.
Walter Purifying Co, Easton, Pa, mfrs of purifiers and mill furnishers.
National Pulley Covering Co, Baltimore, Md.
A N Wolf, Allentown, Pa, mfr roller mills, etc.
The Frost Mfg Co, Galesburg, Ill, mill and elevator machinery and supplies.
The Gutta Percha & Rubber Mfg Co, 159-161 Lake st, Chicago, Ill, belting and rubber goods.
Superlative Purifier Co, Milwaukee, Wis.
Cockle Separator Mfg Co, Milwaukee, Wis.
Vortex Dust Collector Co, Milwaukee, Wis.

NO OTHER RAILWAY IN THE NORTHWEST

has in so short a period gained the reputation and popularity enjoyed by the **WISCONSIN CENTRAL LINE**. From a comparatively unknown factor in the commercial world, it has been transformed to an independent, influential, grand **Through Route**, with magnificent depots, superb equipment and unsurpassed terminal facilities. Through careful catering to details, it has won for itself a reputation for solidity, safety, convenience and attention to its patrons, second to no railroad in the country. **Pullman** sleepers, models of palatial comfort, dining cars in which the cuisine and general appointments are up to the highest standard, and coaches especially built for this route, are among the chief elements which have contributed towards catering successfully to a discriminating public. Located directly on its line, between **Chicago and Milwaukee**, and **St. Paul and Minneapolis**, and **Chicago and Ashland and Duluth**, are the following thriving cities of Wisconsin and Michigan: **Burlington, Waukesha, Fond du Lac, Oshkosh, Neenah, Menasha, Stevens Point, Chippewa Falls, Eau Claire, New Richmond, Hurley, Wis., Ironwood, Mich., and Bessemer, Mich.**

For details, information, lowest current rates, berths, etc., via this route, to any point in the **Northwest**, apply to nearest Ticket Agent, or address

WM. S. MELLEN, JAMES BARKER,

General Manager. Gen'l. Pass. & Ticket Agt.
MILWAUKEE.

"TRIUMPH" CORN SHELDER

CAPACITY
3000 BUSHELS PER DAY.
Shells wet or dry corn.
CHEAPEST AND BEST SHELDER.

PAIGE MANUF'G CO.,
No. 12 Fourth St., Painesville.
[Please mention this paper when you write to us.]



ZUCCATO'S PAPYROGRAPH.

BEST and most durable duplicating process in use. From one original, written with any pen, over 1,000 copies of writings, drawings, circulars, music, etc., may be printed at the rate of 500 per hour, in black or colors.

No gelatine, no roller, no dotted lines. Copies are perfect fac-similes.

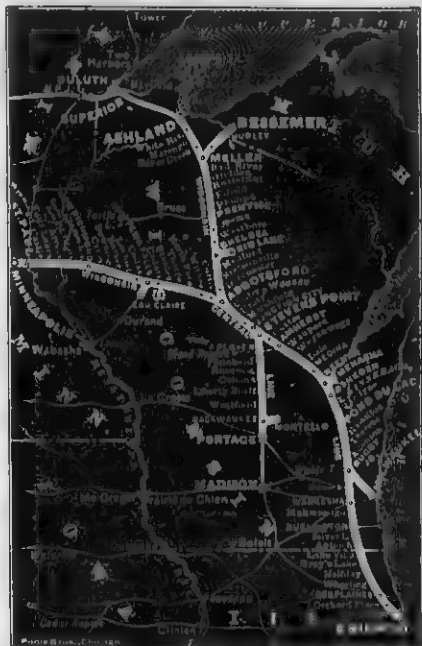
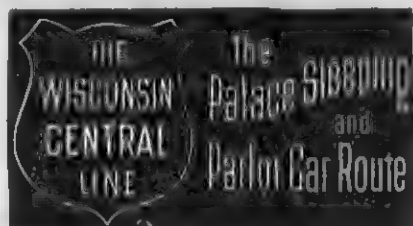
Used by largest firms and corporations—Thurber, Whyland & Co., Austin, Nichols & Co., N. Y. Life Ins. Co., and many others.

Send for price list, testimonials, and specimen prints. Prices reduced.

THOMAS & ANDERSON, Gen'l Agents,

174 & 176 Pearl Street, NEW YORK, N. Y.

This Space is reserved for **W. S. CASTERLIN**, of Scranton, Pa., Lightning Millstone Dresser, which will appear in April number. No more mill-pick grinding. Bits, one cent each, can be changed five times in one minute. Look out for it! No. 1503 Penn Ave.



TO AND FROM THE NORTHWEST.

TICKET OFFICES

CHICAGO—205 Clark St.
 Depot, Cor. Polk St. and 5th Avenue.
 Palmer House.
 Grand Pacific Hotel.
 Tremont House.
 MILWAUKEE—395 Broadway.
 New Passenger Station.
 ST. PAUL—173 East Third St.
 Union Depot.
 MINNEAPOLIS—19 Nicollet House Block.
 Union Depot.



After Forty years' experience in the preparation of more than One Hundred Thousand applications for patents in the United States and Foreign countries, the publishers of the Scientific American continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries. Their experience is unequalled and their facilities are unsurpassed.

Drawings and specifications prepared and filed in the Patent Office on short notice. Terms very reasonable. No charge for examination of models or drawings. Advice by mail free.

Patents obtained through Munn & Co. are noticed in the SCIENTIFIC AMERICAN, which has the largest circulation and is the most influential newspaper of its kind published in the world. The advantages of such a notice every patentee understands.

This large and splendidly illustrated newspaper is published WEEKLY at \$3.00 a year, and is admitted to be the best paper devoted to science, mechanics, inventions, engineering works, and other departments of industrial progress, published in any country. It contains the names of all patentees and title of every invention patented each week. Try it four months for one dollar. Sold by all newsmen.

If you have an invention to patent write to Munn & Co., publishers of Scientific American, 361 Broadway, New York.

Handbook about patents mailed free.

LORD & THOMAS, NEWSPAPER Advertising, 45 to 49 Randolph St., Chicago, keep this paper on file and are authorized to make contracts with **ADVERTISERS.**

CATARRH positively cured by the great German Remedy. Sample package and book for 4 cents in stamp. E. H. Medical Co., East Hampton, Conn.



Owens and operates nearly 5,000 miles of thoroughly equipped road in Illinois, Wisconsin, Iowa, Missouri, Minnesota and Dakota.

It is the Best Direct Route between all principal points in the Northwest, South-west and Far West.

For maps, time tables, rates of passage and freight, etc., apply to the nearest station agent of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, or to any Railroad Agent anywhere in the World.

R. MILLER, General Manager. **A. V. H. CARPENTER,** Gen'l Pass. and Tkt. Agt.
J. F. TUCKER, Asst. Gen'l Manager. **GEO. H. HEAFFORD,** Asst. Gen'l Pass. and Tkt. Agt.
 MILWAUKEE, WISCONSIN.

For information in reference to Lands and Towns owned by the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY, write to H. G. HAUGAN, Land Commissioner, Milwaukee, Wisconsin.

THE CHICAGO AND NORTH-WESTERN RAILWAY.

Penetrates the Centres of Population in ILLINOIS, IOWA, WISCONSIN, MICHIGAN, MINNESOTA, DAKOTA, NEBRASKA AND WYOMING.

Its TRAIN SERVICE is carefully arranged to meet requirements of local travel, as well as to furnish the most attractive routes for through travel between important

TRADE CENTRES.

Its EQUIPMENT of Day and Parlor Cars, Dining and Palace Sleeping Cars is without rival.

Its ROAD-BED is perfection, of stone-ballasted Steel.

The North-Western is the favorite route for the Commercial Traveler, the Tourist and the Seekers after New Homes in the Golden Northwest.

Detailed information cheerfully furnished by

JNO. S. GEORGE, Commercial Agent, Milwaukee, Wis.

MARVIN RUGHITT, Vice-Prest and Gen'l Manager. **H. C. WICKER,** Traffic Manager.

E. P. WILSON, Gen'l Passenger Agent.

FOR SALE.

Two 30-inch Allis & Co.'s

IRON FRAME BURR STONE FEED MILLS

Address,

H. P. YALE & CO., Milwaukee, Wis.



The Milwaukee, Lake Shore & Western Railway has been well named the Fishing and Hunting Line of Wisconsin, passing, as it does, through thousands of acres of but partially explored woods and within easy reaching distance of lakes and streams that have never been fished by white men, all well stocked with the game fish for which Northern Wisconsin waters are noted. The woods abound with game: deer, bear, wolf, mink, beaver, pheasant, and other game are quite plentiful.

THE ONLY LINE

From Milwaukee to the new Iron Mining District in Wisconsin and Michigan that reaches ALL of the developed Mining towns: GOGHEE, WAKEFIELD, BESSEMER, IRONWOOD and HURLEY.

Direct line to ASHLAND and DULUTH. Sleeping cars between ASHLAND and CHICAGO. The GUIDE BOOK, and other descriptive matter, containing full information, maps and engravings of the country traversed by the line, will be sent to any address on application to the General Passenger Agent.

CHAS. L. RYDER, Gen. Agent, 105 Washington St., Chicago.

City ticket office, 62 Clark St., Chicago.

Chicago Depot, Cor. Wells and Kinzie Streets, (C. & N. W. Ry.)

City ticket office, 102 Wisconsin St., Milwaukee.

F. WHITCOMB, Gen'l Manager. **CHAS. V. MCKINLAY,** Gen'l Pass. Agent.

MILWAUKEE WIS.

Milwaukee & Northern R. R.

SHORT LINE

BETWEEN

CHICAGO, MILWAUKEE,
 Menasha, Neenah, Appleton,
 Depere, Green Bay, Ft Howard,
 Marinette, Menominee,
 IRON MOUNTAIN.

3 EXPRESS TRAINS DAILY EACH WAY

BETWEEN

Chicago, Milwaukee,
 Appleton and Green Bay.

2 EXPRESS TRAINS DAILY EACH WAY

CHICAGO, MILWAUKEE,
 Menominee and Iron Mountain.

Elegant Pullman Palace Sleeping Cars on all Night Trains

CONNECTIONS.

At Milwaukee, in New Passenger Station with C. M. & St. Paul R'y and Wisconsin Central Line. At Plymouth, with C. & N. W. R'y for Sheboygan, etc.

At Menasha, with W. C. Line.

At Neenah, with W. C. Line.

At Appleton, with M., L. S. & W. R'y and C. & N. W. R'y.

At Forest Junction, with M., L. S. & W. R'y.

At Green Bay and Ft. Howard, with G. B. W. & St. P. R. R. and Stage and Boat for Sturgeon Bay.

At Oconto Junction, with M., L. S. & W. R'y for Oconto.

At Menominee, with C. & N. W. R'y.

At Iron Mountain, with C. & N. W. R'y.

C. F. DUTTON, General Supt. **W. B. SHEARDOWN,** Gen'l Ticket Agent.

PRIVATE Telegraphic Cipher

Compiled expressly for the use of

Millers, Flour and Grain Brokers,

For Private, Telegraphic Correspondence, either
for land or cable lines.

This CODE has been approved and is used by the best firms in America and Europe. It contains Flour Tables, Bran Tables, Middlings Tables, Flour Grades and Brands, Time of Shipment, Dates, Names of Places, American Currency, Sterling Quotations, Table on Limits, etc., Drawing, Credits, etc., and Shipments on Joint Account, Miscellaneous, Market Upwards, Market Downwards, Insurance, Shipping and Freight, Shipping by Regular Lines of Steamers, Finance, Bankers' Names, Standing of Firms, Telegraphic, Advances, Commission, Stocks and Crops, Weather, Samples and Quality, Equivalent of Sacks in Barrel Quantities, Commission Tables, Interest Tables, Equivalent Flour Prices in Currency, Sterling, Francs, Guilders, and Marks, Comparative Tables, Sack and Barrel Flour, Ocean Freight Rates (Comparative Table), Sailings from Seaboard (Table), Key to Sailings from Seaboard Table, Foreign Weights and Measures, etc.

We respectfully refer to the following well-known firms: S. H. Seamans (Empire Mills), Sec'y of the Millers' National Association; E. Sanderson & Co. (Phoenix Mills), Milwaukee, Wis.; Daisy Roller Mills, Milwaukee, Wis.; Nunnemacher & Co. (Star Mills), Milwaukee, Wis.; Roots & Co. (Miller's), Cincinnati, O.; C. H. Seybt, (Miller), Highland, Ill.; Kosmuck & Co., (Flour Brokers), Glasgow, Scotland; J. F. Imbs & Co. (Millers), St. Louis, Mo.; E. Schraudonbach, Okauchoe Roller Mills, Wis.; Winona Mill Co., Winona, Minn.; Herriek, Kirk & Co., New York; Acme Milling Co., Indianapolis, Ind.; W. H. Jones, New Brighton, Eng.; Chas. Kreutziger, Heidelberg; Wm. Paddock & Co., Terre Haute, Ind.; Mandom Roller Mill Co.; L. R. Finch's Sons, New York; Jupiter Mills, Milwaukee; Morse & Sammis, Minneapolis, Minn.; Felst, Krauss & Co., Milwaukee; American Starch Co., Columbus, Ind.; Rudolph & Horne, Liverpool, Eng.; Cleveland Milling Co., Cleveland, O.; Zinkelsen B. & Co.; Abdon Milling Co., Indianapolis; Norton Milling Co., Chicago; Norris & Carruthers, Montreal; Nelson Milling Co., Evansville; Vailor & Spies Milling Co., Marine, Ia.; J. S. Hillyer; Gilchrist & Bros., Glasgow, Scotland; David Wright, Chicago; Crain & Baird, Montreal; H. D. Porteous & Co., Liverpool, Eng.; Aultman & Taylor Co.; John H. Peacock, Minneapolis, Minn.; Eckhardt & Swan, Chicago; E. H. Seybt, Highland. Albion Milling Co., Mich.; F. W. Stock, Hillsdale, Mich.; A. W. Howard, Minneapolis, Minn.; C. Hoffman & Son, Enterprise, Ky.; Reiff-Huber Co., Chicago; Spink Bros., Toronto, Can.; Mr. Le Due, City; Chas. Tiedeman, O'Fallon, Ill.; Hurins, Sons & Co., Cincinnati, O.; G. Montague & Co., Chicago; Phoenix Mill Co., Davenport, Ia.; Blanton, Watson & Co., Indianapolis, Ind.; Porter Milling Co., Winona; T. & A. B. Snider, German Mills, Ont.; Jenks & Mering; Richardson & Evans; Sidle, Fletcher & Co.; Comstock & Co.; I. T. Bronson; Manegold & Son; Farquhar Bros.; Central Milling Co.; Wattson & Farr; Globe Milling Co.; Geo. Teleson & Co.; Hurd; Herriek, Kirk & Co.; N. W. Miller; Wright & Hardie; Jolleson Com Co., Atlanta; Yaeger Flour Mill Co.; Thos. Todd & Son; Ripon Roller Mills; Schoellkopf & Mathew; W. Throw & Co.; and many others.

Name of firm ordering copies printed on title page with cable address, etc., free of charge, making it to all intents and purposes your own Private Cable Code. State number of copies desired when writing; also style of binding preferred.

Address:

The Riverside Printing Co.,

124 Grand Avenue

MILWAUKEE, WISCONSIN.

THE NEW YORK WORLD

Had a Total Circulation During 1886 of

70,126,041 Copies.

Present Circulation over Six Million Copies a Month.

Double That of Any Other Morning Newspaper in America.

The World's Weekly Edition
IS WITHOUT A RIVAL AS A NEWSPAPER AND AS A
CHAMPION OF THE PEOPLE'S RIGHTS.

THREE EXTRAORDINARY GIFTS TO ITS SUBSCRIBERS.

HISTORY OF THE U. S. HISTORY OF ENGLAND. EVERYBODY'S GUIDE.

Bound in Leatherette Tree Calf.

Regular Price \$2.00.

This dainty book of 820 pages is indispensable to every one as a work of quick and convenient reference. It is upon an entirely novel and original plan, which makes it indispensable to every person, no matter how many other histories he may have.

The arrangement is chronologically, by years, from 432 to 1847. Every event is narrated in the order of its date. These are not confined, as in other works, to political matters, but embrace every branch of human action. It describes under its proper date all important events: a discovery in science and the use of the arts, fires, floods, hailstorms, earthquakes, cyclones, epidemics, accidents and disasters on sea and land; labor troubles, strikes and lockouts, and hundreds of other matters never mentioned by historians. Besides being a history in the ordinary sense, it is a condensed newspaper file for four hundred years. Over 100,000 copies were presented to subscribers during 1886, and every one who received a copy was charmed and delighted.

Bound in Leatherette Tree Calf.

Regular Price \$2.00.

This, the second of THE WORLD'S History Series, is uniform in style and arrangement with its History of the United States. As a storehouse of facts it is without a rival. Every history of England has been carefully searched for data, and many important corrections have been made in the commonly received chronology. Like its companion volume, it is much more than an ordinary history, embracing every branch of human action, and its facts are gathered from thousands of sources not touched by any historian. Attention has been particularly directed to the Victorian era, and the dates of every important event of her reign are given with a minuteness of detail that renders it invaluable to every student of our own times. As a work of convenient reference for the editor, teacher, pupil and general newspaper reader, nothing like it has ever been published, and it will take the place in every library not only of the hundreds of books in which is scattered the information here gathered together, but of files of newspapers for the past century. The History of England is a little larger than the History of the United States.

Bound in Leatherette Tree Calf.

Regular Price \$2.00.

This is uniform in style and binding with the histories, but a much larger book than either, containing 410 closely printed pages of fine type. It is a condensation, by the author, of Moore's "Universal Assistant," containing everything making that work so popular, and omitting only such of the business forms and illustrations as added to the bulk without increasing its usefulness. The "Universal Assistant" originally sold for \$6, and has become a most necessary in every home hold as a dictionary or a clock. The value of the work lies in the fact that the information is of the kind needed in ordinary daily life, yet cannot be obtained without reference to rare and costly books, and is not found in encyclopedias. It tells the housewife how to make fresh extracts, the husband how to break well or mend ailing horses. It reveals the secrets of the dyer and bleacher, of the grocer and confectioner, and of all special trades. A table of contents would fill six columns of THE WORLD. The binding is leatherette tree calf of a slightly different design, both in the "tree" and the gilt, from the histories.

Single Copies of These Books Cannot be Purchased for Less Than \$2.00 Each.

On Receipt of \$2.00 in cash, or 1 or 2 cent postage stamps, Money Order, Express Money Order or Registered Letter, we will send the "UNITED STATES MILLER" for one year, and one copy of "The N. Y. Weekly World" for one year and any one of the three books described above which you may select and a "Handy Atlas of the world," containing 138 Colored Maps, Diagrams, Tables, etc., Post-paid to any address in the United States or Canada. Rush in your orders. Address,

E. HARRISON CAWKER,

MILWAUKEE, WIS.

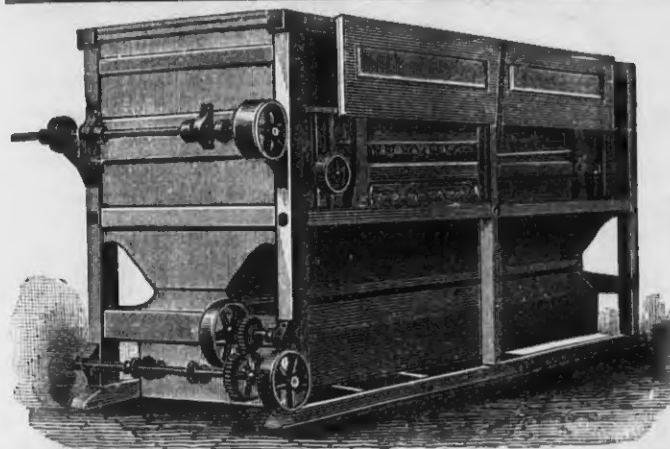
Mineral Wool Sectional Coverings!

FOR STEAM PIPES AND BOILERS, GAS AND WATER PIPES.

Made in sections three feet long, to fit every size pipe. Also in suitable sheets to fit any Boiler Dome, Drum or Tank. The best non-conductor, absolutely Fire-Proof, will not Char, Crack, Burn or Powder. The cheapest and best. Easily applied or removed by any one. Also, Mineral Wool in bulk, for deafening and packing, constantly on hand. Send for Circulars and Price List.

MANUFACTURED BY THE

WESTERN MINERAL WOOL CO., CLEVELAND, O.



—THE— Advance Shake FLOUR BOLT.

Better than the Centrifugal or Old-Fashioned Bolt in every part of the mill.

No forced bolting in this Machine, but a sliding action of the chop which tails the impurities over instead of driving them through the cloth.

No Machine built can begin to equal the work of the ADVANCE.

This is no clap-trap or hoax, and if any miller is about to build or remodel, it would pay him to go a thousand miles to see this machine and its work.

Be sure and write for particulars and circulars.

PARKER, BLOOD & TOWER, LAINGSBURG, MICHIGAN.

SCRIBNER'S MAGAZINE

Published Monthly
with Illustrations
Subscription Price \$3.00 a Year

**AN IMPORTANT
CLUB OFFER**

**SCRIBNER'S
MAGAZINE**

Gives its readers literature of lasting interest and value, it is fully and beautifully illustrated and has already gained a more than national circulation exceeding 125,000 copies monthly.

PRICE 25 CENTS A NUMBER \$3.00 A YEAR

SPECIAL ARRANGEMENTS with Messrs.
Charles Scribner's Sons the Publishers enable us to offer **SCRIBNER'S MAGAZINE** with the

UNITED STATES MILLER,

At the low combination rate \$3.40 for both. Send your order now. Subscriptions may begin at any time.

E. HARRISON CAWKER,

Publisher **UNITED STATES MILLER, Milwaukee, Wis.**

COLUMBUS

BUGGY & COMPANY,

COLUMBUS, OHIO,

Manufacturers of FIRST-CLASS

Buggies, Surreys

PHAETONS,

Park Wagons, Light Carriages.

Our work is fully Guaranteed and absolutely reliable.

BEST FOR LIVERY SERVICE!
FOR FAMILY SERVICE!
For PLEASURE DRIVING

POINTS OF SUPERIORITY:

Superior Material and Workmanship, Fine in Finish, Easy in Riding Qualities, Light in Draft,

Unsurpassed in Durability,

Cheapest for Quality of Goods in the World.

Private Line Telephones!



These new instruments (see cut) are emphatically superior to all others for all lines within a mile. They embody all the latest improvements, work splendidly in all kinds of weather, and are great favorites with business men. PRICE PER SET, \$7.50 Send for

Illustrated circular and testimonials. Address,

EDWARD E. HARBERT & CO.,

Dealers in Telephone and Electric Supplies of every description.

159 La Salle Street, CHICAGO.

THE "SALEM"



is the original round cornered Elevator Bucket and its shape is broadly covered by a foundation patent.

All buckets of the same shape, though produced by a different process, trespass upon our rights, and render dealers and users as well as manufacturers liable for damages.

AVOID INFRINGEMENTS.

All legitimate "Salem" Buckets are plainly marked with the word SALEM.



W. J. CLARK & CO., Sole Manufacturers, SALEM, OHIO.

THORNBURGH & GLESSNER, Gen'l Agents, CHICAGO.

BELLAS, PATTON & CO., Commission Merchants

3 INSURANCE EXCHANGE BLOCK,

218 La Salle St., CHICAGO.

GRAIN AND PROVISIONS

Bought or sold for shipment, or carried on margins.
Market Reports furnished to correspondents.

N. B. CLARK.

A. C. MARTIN.

CLARK & MARTIN, Commission Merchants

FLOUR, GRAIN,

FEED AND HAY,

No. 51 West Second St., Cincinnati, O.

E. B. OWENS & CO., Provisions and Grain BALTIMORE, MD.

Sell on Track West and to Arrive.
Fine Storage Cellars for Meat and Lard.
Handle all kinds of Grain.
Liberal Advances on Consignments.

REFER TO Western National Bank, Baltimore; Citizens' National Bank, Baltimore; Wm. Ryan & Sons, Dubuque, Iowa; Whitmore Bros., Quincy, Ill.; Bloomington Pork Packing Co., Bloomington, Ill.

WM. GRIFFITHS. JAMES MARSHALL. GEO. E. DODGE.

GRIFFITHS, MARSHALL & CO. Grain Commission

MINNEAPOLIS AND DULUTH, MINN.

Orders for Choice Milling Wheat Given Special Attention.

PATTERSON BROS. & CO., Commission Merchants

FOR SALE OF

WHEAT, CORN, OATS, RYE.

DEALERS IN

Seeds, Hominy, Grits, Steam Dried Corn Meal,

44 VINE ST., CINCINNATI.

ORDERS AND CONSIGNMENTS SOLICITED.

ESTABLISHED 1876.

JNO. R. TURRENTINE, —GENERAL—

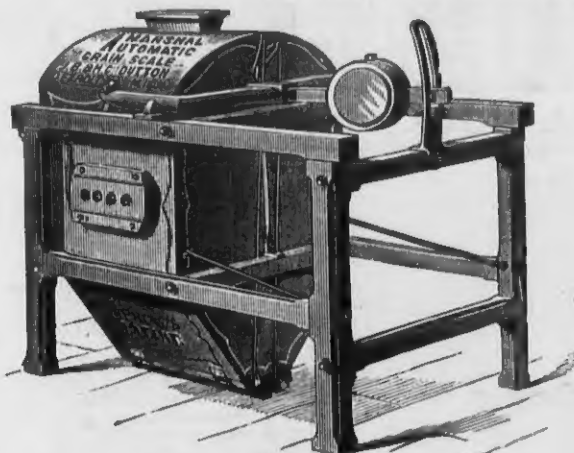
Merchandise and Produce Broker,
FLOUR, GRAIN, HAY AND RICE.

Dock Street, WILMINGTON, N. C.
MEMBER OF CHICAGO BOARD OF TRADE.

Refers by permission to A. K. Walker, Esq., cashier First Nat'l Bank, Hall & Pearsall, Adrian & Vollers, Merchants, Wilmington; Robt. Carey & Co., New Orleans, La.; Geo. P. Plant & Co., St. Louis, Mo.; Martin & Bennett, Chicago, Ill.

Solicits Orders for Carolina Rice and Peanuts.

J. B. DUTTON IMPROVED AUTOMATIC GRAIN, FLOUR AND FEED



SCALE

Weights and Registers Absolutely
Correct.

MACHINES SENT ON THIRTY DAYS TRIAL.

Our Automatic Register is the most perfect and simple Register in use. It is especially adapted for use by Flour Packers. It records up to 1,000,000, when it repeats the operation automatically.

Send for Circulars and Prices.

—THE

J. B. Dutton Mfg. Co.

22 and 24 WOODWARD AVENUE, DETROIT, MICHIGAN, U. S. A.

[Please mention this paper when you write.]

* Campbell's Patent Grate Bar *

PATENTED AUGUST 1st, 1882. No. 261,880.

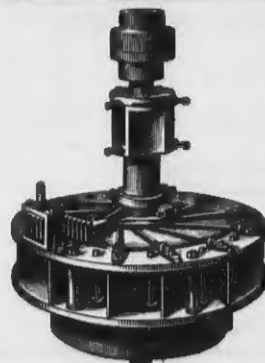


Mention this Paper.

A LONG FELT WANT SUPPLIED AND THE USERS OF GRATE BARS MADE HAPPY.

FOR PRICES AND INFORMATION ADDRESS,

GARDINER CAMPBELL & SONS, Manufacturers, 242 to 246 Oregon Street, Milwaukee, Wis., U. S. A.



JAMES LEFFEL'S IMPROVED WATER WHEEL,

Fine New Pamphlet for 1887.

The "OLD RELIABLE" with Improvements, making it the Most Perfect Turbine now in use, comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads in this country. Our new Pocket Wheel Book sent free. Address,

JAMES LEFFEL & CO., Springfield, Ohio,

and 110 Liberty St., New York City.

[Please mention this paper when you write to us.]



POOLE & HUNT'S Leffel Turbine Water Wheel

Made of best material and in best style of workmanship.

Machine Molded Mill Gearing

From 1 to 20 feet diameter, of any desired face or pitch, molded by our own SPECIAL MACHINERY. Shafting, Pulleys, and Hangers, of the latest and most improved designs.

Mixers and General Outfit for Fertilizer Works.

Shipping Facilities the Best in all Directions.

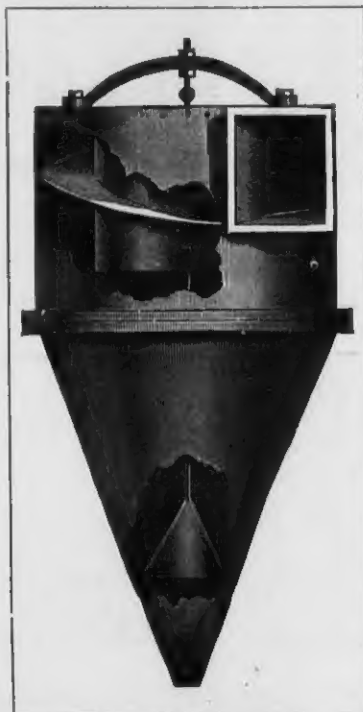
POOLE & HUNT, Baltimore, Md.

N. B.—Special attention given to Heavy Gearing for Pulp and Paper Mills.
[Mention this paper when you write to us.]

The "VORTEX" DUST COLLECTOR

Guaranteed not to Infringe on any other Dust Collector Patent.

*Can't be Excelled for
Purifiers, Roller Mills,
Grain Cleaners, Eleva-
tors or any other Dust
Producing Machinery.*



No Power !

No Attention !

No Clogging !

Perfect Ventilation !

Low Prices !

Special Sizes Built for Elevators and Wood Working Machinery.

APPLY FOR PRICES BEFORE PURCHASING ELSEWHERE. ADDRESS

✧ VORTEX DUST COLLECTOR CO. ✧
MILWAUKEE, WIS.

IMPORTANT ✧ NOTICE.

Manufacturers of

KURTH'S
COCKLE SEPARATOR.

THE GILBERT BOLTER.

THE MORGAN SCOURER.

MILWAUKEE CENTRIFUGAL
ASPIRATOR.

MILWAUKEE SPIRAL
CONVEYORS.

We are prepared to furnish either STEEL or Zinc Cylinders for Kurth's Patent Improved Cockle Separators as required, and solicit orders for repairs as well as for new machines. Please favor us with a share of your patronage.

COCKLE SEPARATOR M'F'G CO., MILWAUKEE, WIS.

GEO. T. SMITH CENTRIFUGAL REEL

OFFICE OF

LINDEKE ROLLER MILLS,

WM. LINDEKE, *Proprietor.*

DEALER IN

Flour, Grain and Mill Feed.

St. Paul, Minn., November 25th, 1887.

The Geo. T. Smith Middlings Purifier Co., Jackson, Mich.:

GENTLEMEN—Yours received requesting me to write you in detail as to the working of my mill you built for me since first starting.

As you are aware, the contract called for a 150 bbl. mill per 24 hours, or 6 bbls. per hour. It has never turned out less than 7 bbls. per hour, and can easily be run to 200 per day.

The mill runs very light, requiring but little power. My straight flour with low grade out (being less than 5 per cent.) has in every case proved to be equal to the best patents made in this State. Yield is 4 bushels 24½ lbs. uncleaned wheat per barrel.

My straight flour has been tested a great number of times by different parties, as well as myself and expert bakers, and proves to be better than the average patents. We have never made but the two grades—low grade and straight.

The mill is a beautiful piece of workmanship, better than my contract called for, which called for everything we could think of, and I paid you more than the contract price, which should be evidence that I am more than pleased with the mill.

Very truly yours,

WM. LINDEKE.

Geo. T. Smith Middlings Purifier Co.

Canadian Shops, Stratford, Ont.

JACKSON, MICH.